CROWS NEST WATER SYSTEM (PWSNO 1280232)
SOURCE WATER ASSESSMENT REPORT

February 12, 2001

State of Idaho
Department of Environmental Quality

Disclaimer: This publication has been developed as part of an informational service for the source water assessments of public water systems in Idaho and is based on data available at the time and the professional judgement of the staff. Although reasonable efforts have been made to present accurate information, no guarantees, including expressed or implied warranties of any kind, are made with respect to this publication by the State of Idaho or any of its agencies, employees, or agents, who also assume no legal responsibility for the accuracy of presentations, comments, or other information in this publication. The assessment is subject to modification if new data is produced.

Source Water Assessment for Crows Nest Water System

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000-foot radius of your drinking water source, sensitivity factors associated with aquifer where you live and characteristics associated with the well's construction.

This report, *Source Water Assessment for Crows Nest Water System* describes the public drinking water source, potential contaminant sites located within a 1000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

The Crows Nest Water System drinking water source is a 345-foot deep well drilled in a Columbia River Basalt formation in the vicinity of Harrison, Idaho. The system serves 10 year round and 9 seasonal connections in a housing subdivision on the hillside above Coeur d'Alene Lake.

Crows Nest Water System is required to test quarterly for bacteria and yearly for nitrates. Total Coliform bacteria were present in several samples tested in since 1992. Despite efforts to disinfect the well following positive samples in August and September 2000, a sample drawn from the well tap in November was also positive. Crows Nest installed a Sentry I Pellet Chlorinator before testing again in December 2000. Bacteria were absent from samples drawn at the well head and at four houses in the subdivision. Nitrates have been detected in the water at concentrations ranging from 0.036 to 0.998 mg/l, far below the Maximum Contaminant Level of 10 mg/l since the system came under regulation in 1988.

DEQ conducted a susceptibility analysis of the Crow's Nest Water System well December 21, 2000, and revised it on receipt of additional information from James Sharron, president of the Crow's Nest Cooperative Water Association. Based on water sampling history, the well is highly susceptible to microbial contamination. The well's susceptibility to inorganic and organic chemical contamination is moderate.

The Susceptibility Analysis Worksheet for your well is on page 5 of this report. Table 1 summarizes information about potential contaminant sites documented within 1000 feet of the well. A map showing the 1000-foot zone around the well, and approximate locations of roads and houses is included with this summary (Figure 1). The base map for the figure is a USGS 7.5-minute topographic map.

Table 1.Crow's Nest Water System Potential Contaminant Inventory

Source Description	Source of Information	Potential Contaminants
Roads	USGS Topographic Map: Inventory Supplied by Water System	IOC, SOC, VOC, Microbial
Area where there are more than 10 individual septic systems in a 40 acre tract of land	Inventory Supplied by Water System	IOC, SOC, VOC, Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Crow's Nest Water System has already begun source water protection activities. The well and pump area were fenced in June 2000 to protect the 50-foot sanitary setback zone, an area that is to be kept completely free of herbicides, pesticides, solvents, dust abatement chemicals and petroleum products.

Residents in the 1000-foot zone around the well should be reminded that their drinking water supply is literally under their feet. The Water Association should encourage proper use and disposal of household hazardous chemicals, and should promote septic system maintenance. The Water Association may want to educate its members about preventing cross connections, a potential source of microbial and chemical contaminants in the distribution system.

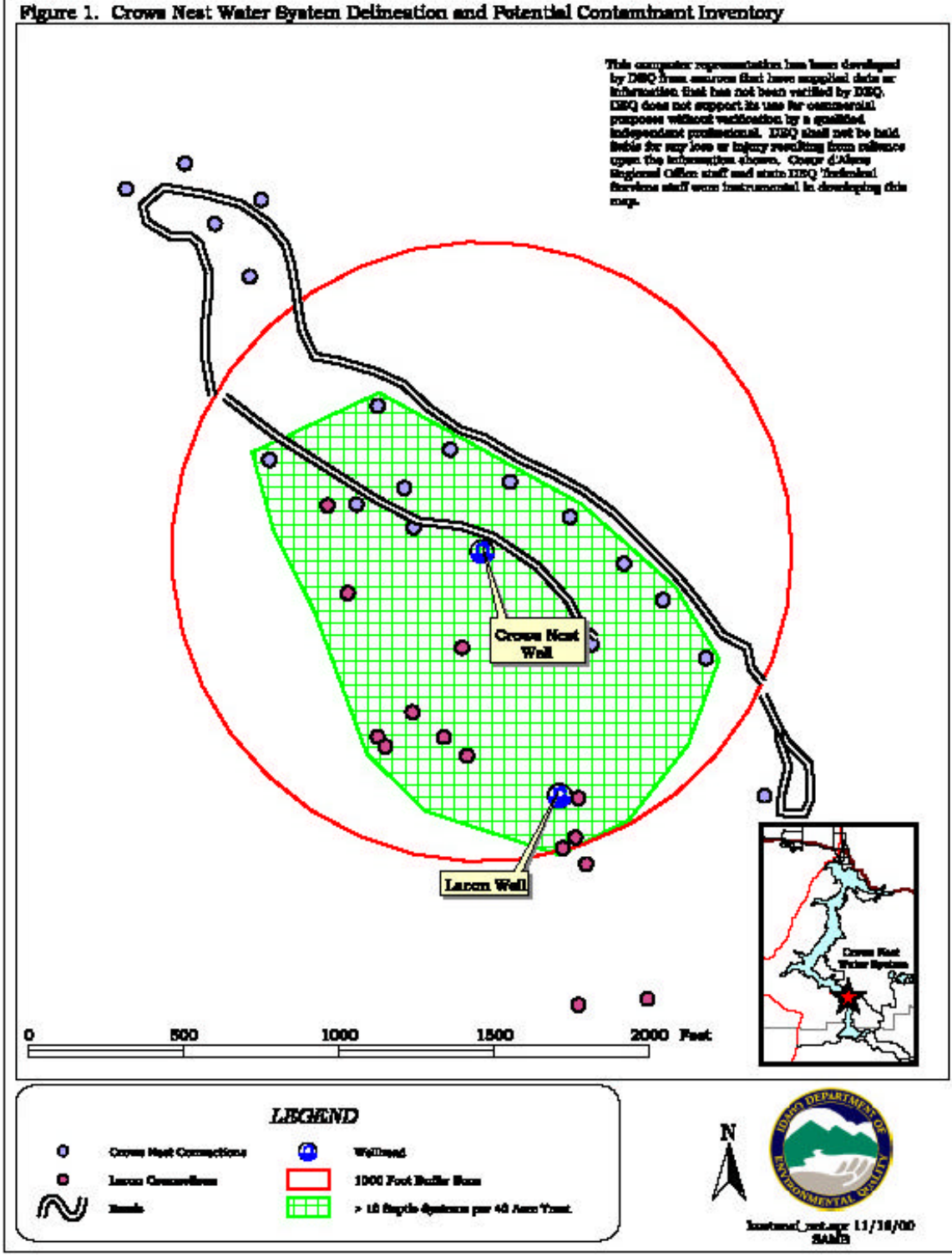
Because Crow's Nest Water System does not have direct jurisdiction over all the land in the 1000-foot zone around its well, it is important for the Association to form partnerships with other land owners and the highway district to regulate activities that could degrade ground water. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website:

http://www.deq.state.id.us

Figure 1. Crows Nest Water System Delineation and Potential Contaminant Inventory



Attachment A

Crows Nest Water System Susceptibility Analysis Worksheet

Ground Water Susceptibility

Public Water System Name : **CROWS NEST WATER SYSTEM** Well# : **WELL #1**

Public Water System Number : **1280232** 2/12/01 9:21:48 AM

1. System Construction		SCORE			
Drill Date	8/7/69				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1999			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		**2**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		**3**			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES MICROBIAL	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		**0**	**0**	**0**	**High***
Potential Contaminant / Land Use - ZONE 1B (1000-foot Radius)					
Contaminant sources present (Number of Sources)	YES	2	2	2	2
(Score = # Sources X 2) 8 Points Maximum		4	4	4	4
Sources of Class II or III leacheable contaminants or Microbials	YES	2	2	2	
4 Points Maximum		2	2	2	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		**6**	**6**	**6**	**4**
Cumulative Potential Contaminant / Land Use Score		**6**	**6**	**6**	**4**
4. Final Susceptibility Source Score		**7**	**7**	**7**	**7**
5. Final Well Ranking		Moderate	Moderate	Moderate	High*

*Well automatically ranked highly susceptible to microbial contamination based on sampling history

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund@ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.